



COR-0993

NRO REVIEW COMPLETED

Copy 5 of 5

14 November 1960

MEMORANDUM FOR : Deputy Director (Plans)
THROUGH : Acting Chief, DPD-DD/P
SUBJECT : Convair E-6 Proposal

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1. [] sent me a copy of the Convair Fort Worth proposal on E-6. From the number and thickness of the several brochures making it up, they have invested a considerable effort in preparing the proposal.

2. As you are aware, among the E-6 requirements are:

- (a) 10 foot ground resolution
- (b) overland recovery
- (c) five days operation
- (d) one mile accuracy
- (e) stereo highly desired

3. The Convair proposal is based on the Atlas-Agena and is unusual in the following ways:

- (a) six Discoverer recovery capsules are attached in a revolver like array to provide one recovered film load after each of six operational days. This requires development of an automatic film splicing technique.
- (b) greatly increased recovery accuracy over Discoverer by use of a Cyclops C (modified Azusa) tracking station [] resulting in a calculated impact CEP of about $3\frac{1}{2}$ miles or better than 10 times the accuracy of Discoverer. To achieve this degree of accuracy and to match the increased capsule payload weight, a higher thrust retro rocket must be developed.

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- (c) overall system positional accuracies of 2,000 to 6,000 feet (depending on mapping errors) using orbital reconstruction techniques similar to ARGON. This may well be more desirable in the overall intelligence-mapping sense than any major expansion of the ARGON program.

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5. Convair have discussed payloads with EK, P & E, ITEX, and Hycon. Their basic proposal uses an EK dual camera arrangement to give 100 per cent stereo. The claimed ground resolution is $8\frac{1}{2}$ feet from a 130 mile altitude using a 36" focal length, f4 lens. Lateral coverage is 182 miles.

An alternate system with a single P & E camera is proposed to give 8 foot ground resolution from the same orbital altitude. This camera includes a 24" focal length, f3.8 lens and has a 260 mile lateral coverage. Although it is claimed that stereo could be obtained with this variant simply by including a second camera, this may require other system changes. The on orbit weight with the EK cameras is 4,125 pounds and with the single P & E camera ~~the weight is 4,530 pounds~~ full film load would add at least 730 more pounds. This 4,530 pounds is probably unrealistically low for a dual installation and is only 200 pounds below the advertised Atlas-Agena B orbital weight.

Convair are quite enthusiastic over another variant using a modified E-5 camera by ITEX. This enthusiasm stems from their belief that higher resolution by a factor of two is preferable to full stereo. This view is not held by PIC. The E-5 modification is increase in scan angle from 20 degrees to 70 degrees resulting in 250 miles lateral coverage from 180 miles altitude. In other respects the E-5 configuration 66" focal length, f5 is held. A dual installation to produce full stereo might be accomplished in 1963 when the Centaur could replace Agena B.

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6. Convair's estimated costs are for the recovery tracking station. Their launch schedule begins in August of 1961 with four engineering tests ending in December and seven operational shots between January and September of 1962.

EUGENE P. KIEFER
Chief, Technical Analysis Staff
DPD-DD/P

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